제8회 논문작성 워크숍:

서론, 재료 및 방법, 결과 다듬기

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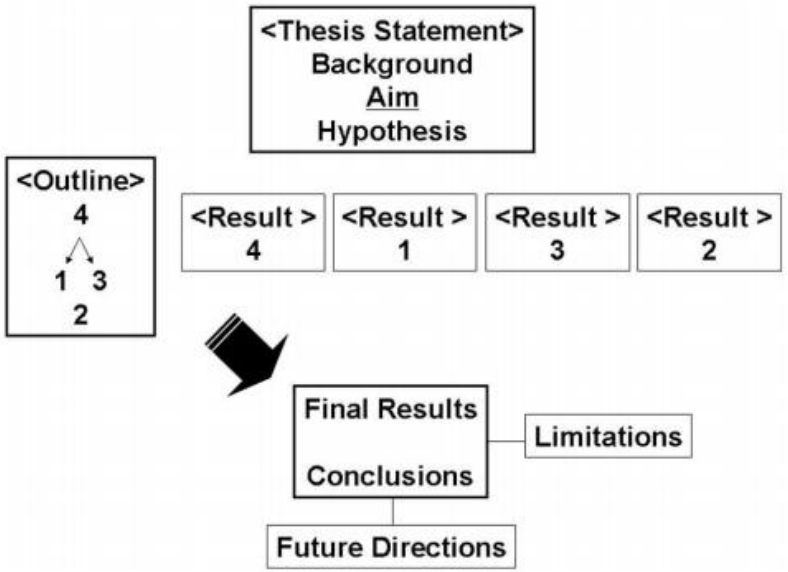
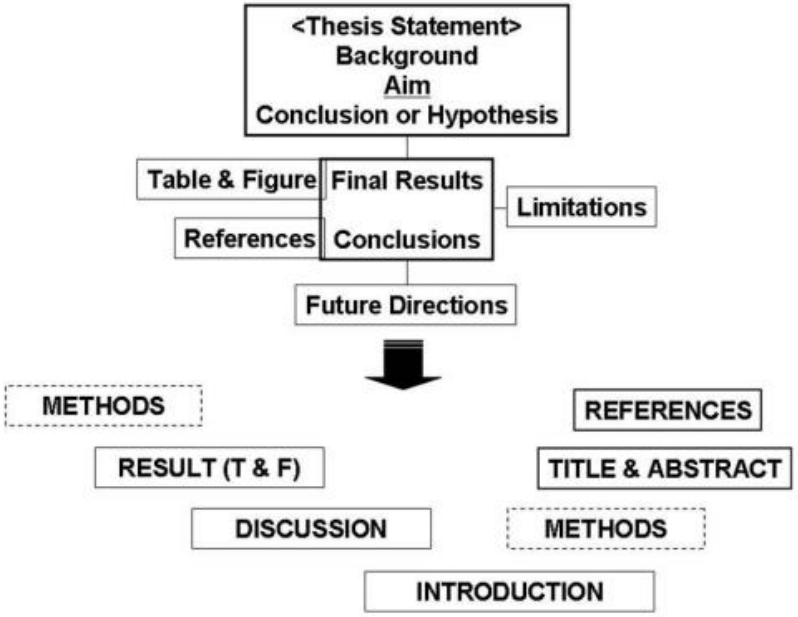
Writing sequence





결과
(Results)

What did I find?

결과 작성의 전략 (1)

- **표와 그림을 잘 구성하고, 활용**
  - ***Tables give the evidence and figures illustrate the highlights.***
- **결과부분은 소제목 (subheadings) 을 활용**
- **각 부제목에서 각 표와 그림의 부분을 설명하고, 해당하는 표와 그림을 표기**
  - ***Introduce each group of tables and figures in a separate paragraph where the overall trends and data points of particular interest are noted.***

결과 작성의 전략 (2)

- **각 소제목에서 각 표와 그림을 언급하여 설명하되, 표와 그림의 내용을 반복하는 것은 최소화**
  - ***Be sure to include basic descriptive data.***
  - ***The text should tell the story.***
- **각 결과가 재료와 방법에서 언급된 연구방법에 의한 결과임을 확인**
- **Indicate specific statistics including key statistics such as:**
  - **Number of samples**
  - **Index of dispersion: SD, SEM**
  - **Index of central tendency: mean, median or mode**

Mistakes to avoid

- This sections lend itself to overwriting, to underwriting, and to giving weight to non-significant results.
- Don't include just % or p value.
  - *Include confidence interval.*
- 'What might it mean' dealt in discussion section.
  - *Avoid beginning to discuss the implications or strengths and weaknesses of your study*
  - *Exception: aid in transition*

    "The results of the previous experiment suggested to us that the dopamine released was not derived from vesicular stores but from the cytoplasm. To test this possibility…"

“The effect on body weight was discussed.”

“Body weight was increased.”

“Body weight increased 43%±2% over a 6-day period.”

결과 작성 요령

1. **Use past tense**
   - " Within 6 months of withdrawal, DTA decreased by 20%±6%."
2. **Do not repeat methods**
3. **Do not interpret in depth**
4. **Use of Figures and Tables**
5. **If data are presented in tables and figures, summarize in the text**
6. **Highlight important findings (with summary / introductory sentence, header)**
7. **Use of "Data Not Shown"**

Blueprint for Results

STROBE – Obs study

- Participants
- Descriptive data
- Outcome data
- Main results
- Other analyses

CONSORT – Randomized trials

- Participant flow: diagram is strongly recommended
- Recruitment
- Baseline data
- Numbers analyzed
- Outcomes and estimation
- Ancillary analyses
- Harms

The Strengthening the Reporting of Observational Studies in Epidemiology (STROBE) statement

CONSORT (Consolidated Standards of Reporting Trials)

STROBE Statement—checklist of items that should be included in reports of observational studies

	Item No	Recommendation
Title and abstract	1	(*a*) Indicate the study's design with a commonly used term in the title or the abstract
		(*b*) Provide in the abstract an informative and balanced summary of what was done and what was found
Introduction		
Background/rationale	2	Explain the scientific background and rationale for the investigation being reported
Objectives	3	State specific objectives, including any prespecified hypotheses
Methods		
Study design	4	Present key elements of study design early in the paper
Setting	5	Describe the setting, locations, and relevant dates, including periods of recruitment, exposure, follow-up, and data collection
Participants	6	(*a*) *Cohort study*—Give the eligibility criteria, and the sources and methods of selection of participants. Describe methods of follow-up *Case-control study*—Give the eligibility criteria, and the sources and methods of case ascertainment and control selection. Give the rationale for the choice of cases and controls *Cross-sectional study*—Give the eligibility criteria, and the sources and methods of selection of participants
		(*b*) *Cohort study*—For matched studies, give matching criteria and number of exposed and unexposed *Case-control study*—For matched studies, give matching criteria and the number of controls per case
Variables	7	Clearly define all outcomes, exposures, predictors, potential confounders, and effect modifiers. Give diagnostic criteria, if applicable
Data sources/ measurement	8*	For each variable of interest, give sources of data and details of methods of assessment (measurement). Describe comparability of assessment methods if there is more than one group
Bias	9	Describe any efforts to address potential sources of bias
Study size	10	Explain how the study size was arrived at
Quantitative variables	11	Explain how quantitative variables were handled in the analyses. If applicable, describe which groupings were chosen and why
Statistical methods	12	(*a*) Describe all statistical methods, including those used to control for confounding
		(*b*) Describe any methods used to examine subgroups and interactions
		(*c*) Explain how missing data were addressed

Participants (STROBE)

- Report the numbers of individuals at each stage of the study (ex. numbers potentially eligible, examined for eligibility, confirmed eligible, included in the study, completing follow-up, and analyzed)

- Give reasons for non-participation at each stage

- Consider use of a flow diagram

Descriptive Data (STROBE)

- Give characteristics of study participants (eg, demographic, clinical, social) and information on exposures and potential confounders

- Indicate the number of participants with missing data for each variable of interest

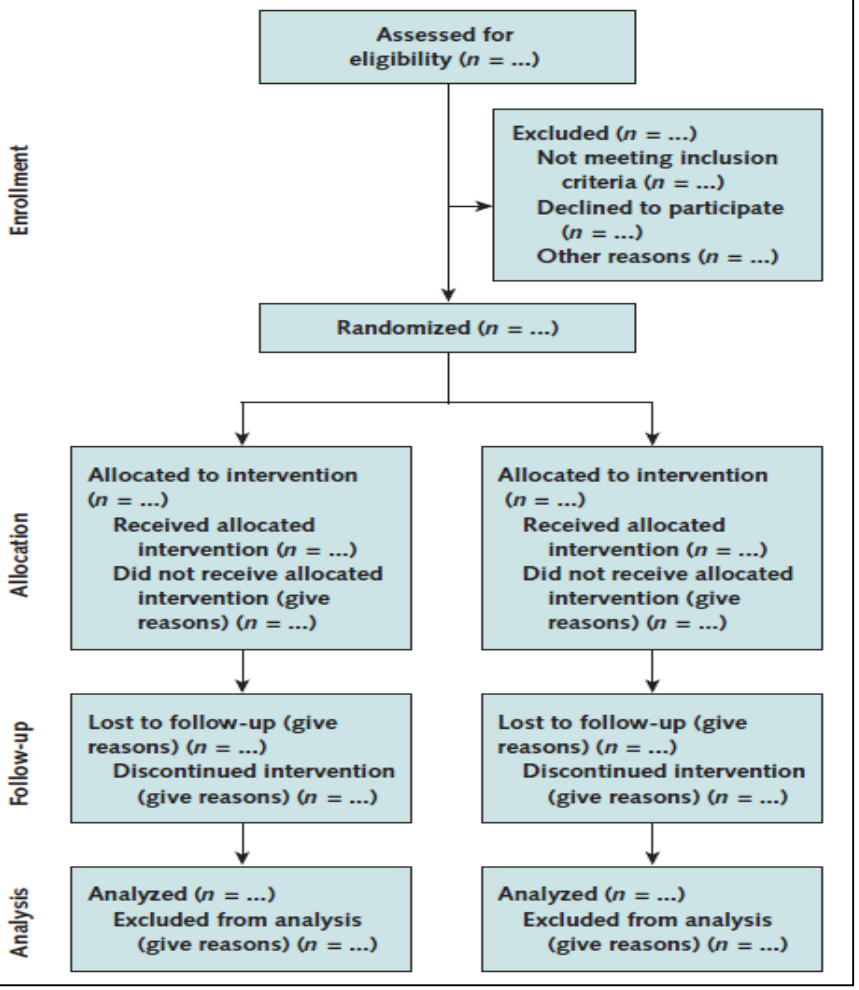
- Cohort study - summarize follow-up time (eg, average and total amount)

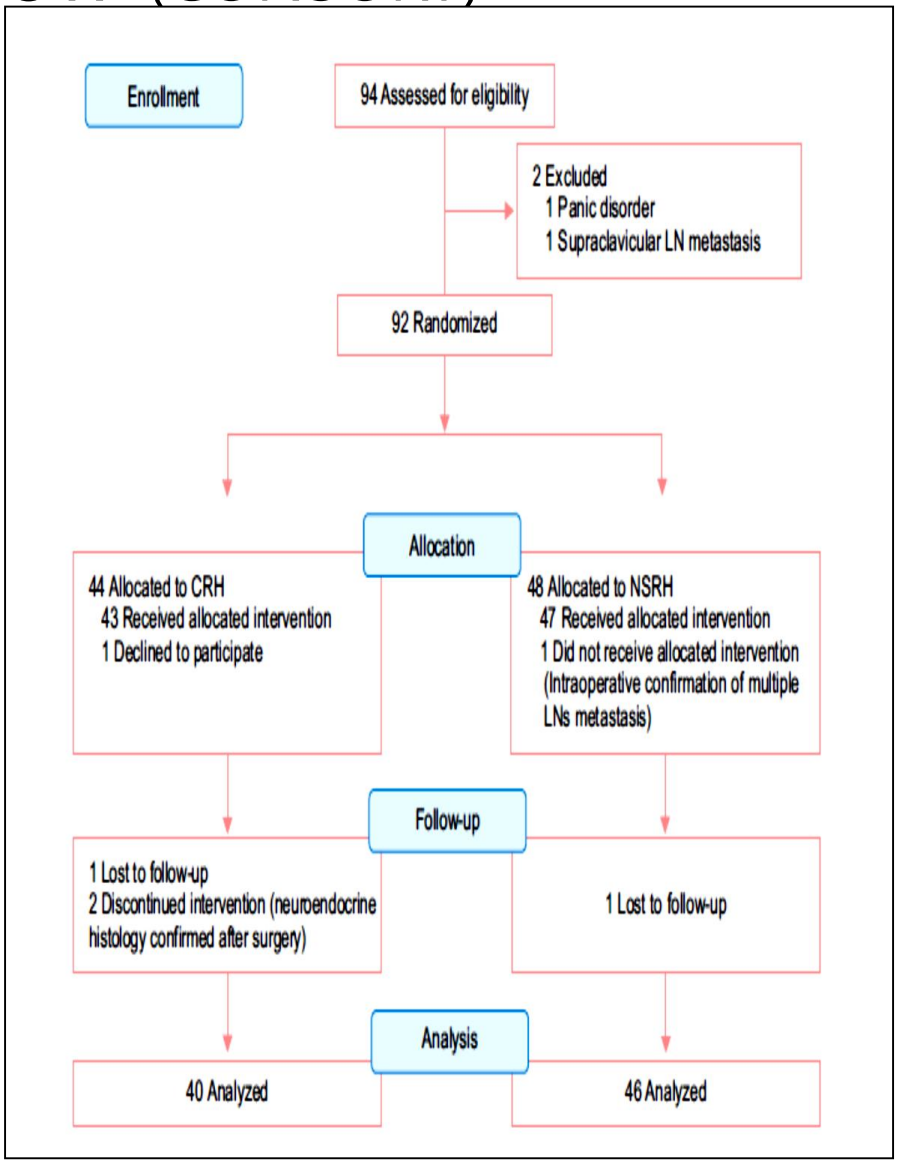
Outcome Data (STROBE)

- Cohort study
  - Report numbers of outcome events or summary measures over time
- Case-control study
  - Report numbers in each exposure category, or summary measures of exposure
- Cross-sectional study
  - Report numbers of outcome events or summary measures

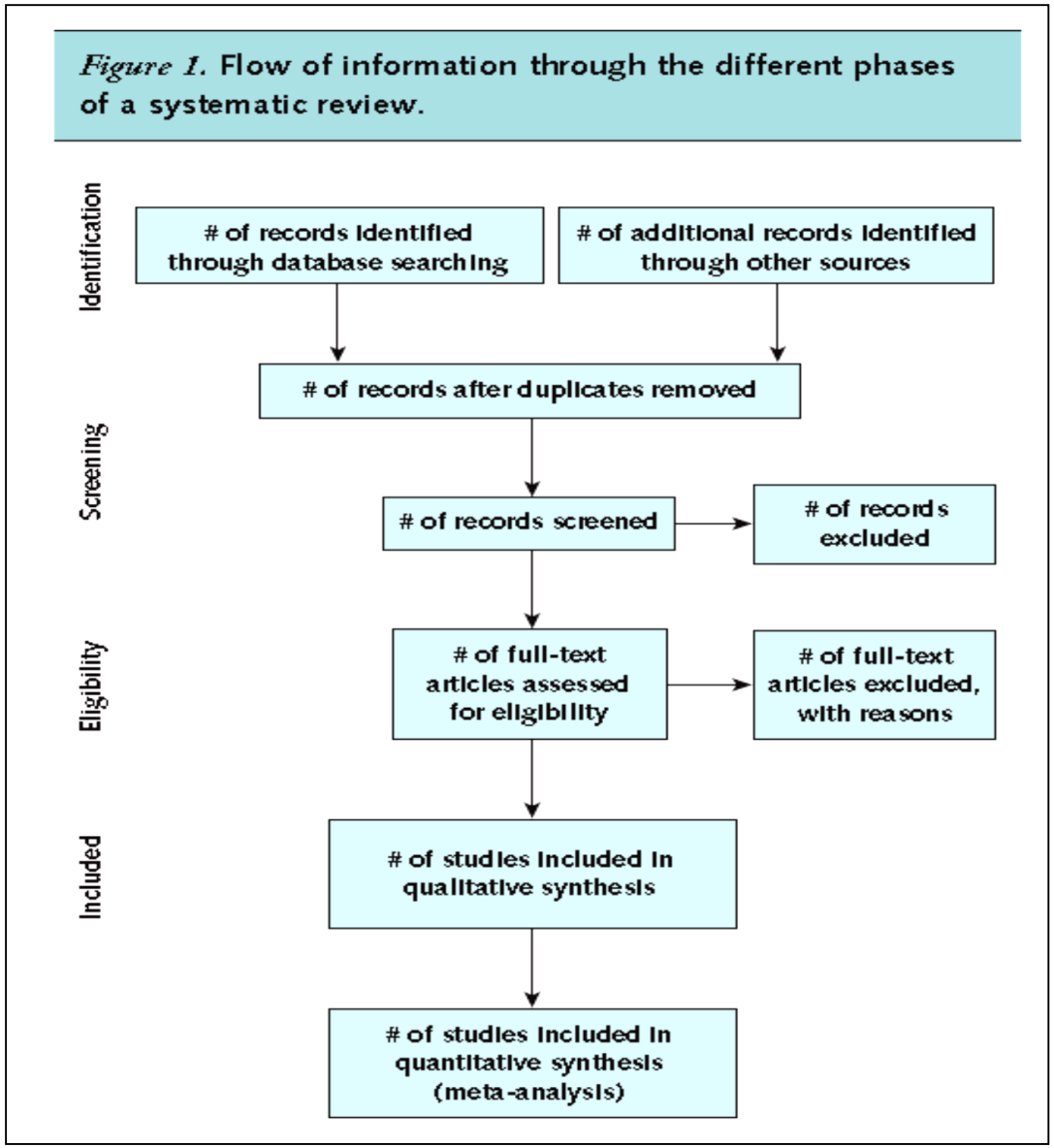
Participant Flow (CONSORT)

Figure. Flow diagram of the progress through the phases of a parallel randomized trial of 2 groups (that is, enrollment, intervention allocation, follow-up, and data analysis).





PRISMA (meta-analysis)



P value의 기술

- Only written to three decimal place (eg. $P = .032$)
- When the P value is less than .001 → $P < .001$
- When the *P* value is greater than .999 → $P > .999$
- *P* value is indicated as the actual value (not displayed as “not significant” or “NS”)

Responsible presentation of data

High crimes

- Fabrication: data that are made up
- Falsification: data that are altered
    - data added or moved
    - data deleted without statistical justification
- Plagiarism: using the words or ideas of others without attribution
- Never mislead
    - exaggerate
    - minimize
    - obscure
- Eliminate reasonable sources of confusion
- The responsibility is yours, not the reader's.

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Identifying risk factors for occult lower extremity lymphedema using computed tomography in patients undergoing lymphadenectomy for gynecologic cancers☆

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Table 1
Basal patient characteristics according to the clinical diagnosis of lower extremity lymphedema (LEL).

	LEL (−) (n = 405)	LEL (+) (n = 106)	p-Value
Age, yrs	52.0 ± 11.8	53.6 ± 10.1	0.231
Preoperative BMI, kg/m^2			0.110
≤25	273 (67.4)	80 (75.5)	
>25	132 (32.6)	26 (24.5)	
Preoperative abdominal wall thickness on CT, mm	23.5 ± 8.1	23.0 ± 7.4	0.566
Origin of cancer			0.062
Cervix	155 (38.3)	48 (45.3)	
Uterine corpus	114 (28.1)	38 (35.8)	
Ovary and tube	133 (32.8)	20 (18.9)	
Vulva and others	3 (0.7)	0	
FIGO stage			0.960
I–II	308 (76.4)	80 (76.2)	
III–IV	95 (23.6)	25 (23.8)	
Open surgery	250 (61.7)	66 (62.3)	0.919
Operation time >3 h	217 (53.6)	59 (55.7)	0.757
Total number of lymph nodes retrieved	21.6 ± 11.6	30.5 ± 13.0	<0.001
Lymph node metastasis	92 (22.7)	37 (34.9)	0.010
Duration of drain, day (range)	5 (0–42)	6 (2–18)	0.120
Amount of drain, ml	1222.5 ± 1340.6	1464.0 ± 1292.6	0.098
Adjuvant pelvic RT[a]	84 (20.7)	53 (50)	<0.001
Type of RT			0.385
Extended pelvic RT	4 (4.5)	4 (7.5)	
Pelvic RT with brachytherapy	4 (4.5)	1 (1.9)	
Pelvic RT	76 (86.4)	48 (90.6)	
Brachytherapy alone	3 (3.4)	0	
Early ambulation ≤24 h	227 (56.2)	47 (44.8)	0.036
Elastic stocking	191 (47.2)	50 (47.2)	0.984
Intermittent pneumatic compression	97 (24.0)	20 (18.9)	0.262
LEL treatment			
Physical therapy	3 (0.7)	100 (94.3)	<0.001
Pharmacotherapy	57 (14.1)	86 (81.1)	<0.001

Values are presented as number (%) or mean ± standard deviation, unless otherwise indicated.
BMI, body mass index; CT, computed tomography; LEL, lower extremity lymphedema; RT, radiotherapy.
[a] Three cases of brachytherapy only were excluded.

Table 1 shows the patient characteristics of the two groups according to the clinical diagnosis of LEL. A total of 106 (20.7%) patients were clinically diagnosed with LEL by a physician. The rest of the subject population (79.3%), which might include occult LEL patients, was not diagnosed with LEL. Of the evaluated variables, the total number of lymph nodes retrieved (30.5 ± 13.0 vs. 21.6 ± 11.6, $p < 0.001$) and the positivity rate of the lymph nodes for malignancy (34.9% vs. 22.7%, $p = 0.010$) were significantly higher in patients diagnosed with LEL than in those who were not. Patients with a diagnosis of LEL received adjuvant pelvic radiotherapy more frequently than those without LEL diagnosis (50.0% vs. 20.7%, $p < 0.001$). Early ambulation ≤24 h after surgery was more frequently observed in patients who were not diagnosed with LEL than in those who were (56.2% vs. 44.8%, $p = 0.036$). Most of the patients diagnosed with LEL received physical therapy and/or took oral medication of *Vitis vinifera* extract (94.3% and 81.1%, respectively), whereas only a small proportion of the patients not diagnosed with LEL received those therapies (0.7% and 14.1%, respectively) [14,15].

Table 2
Univariate and multivariate analyses of risk factors for clinical lower-extremity lymphedema.

	Univariate		Multivariate	
	OR (95% CI)	p-Value	OR (95% CI)	p-Value
Preoperative BMI >25 kg/m^2	0.7 (0.43–1.13)	0.144	0.7 (0.39–1.16)	0.149
Cervix or corpus cancer	2.2 (1.28–3.69)	0.004	1.5 (0.75–2.84)	0.261
Advanced stage	1.0 (0.61–1.68)	0.960	–	–
Total number of lymph nodes retrieved >30[a]	3.7 (2.36–5.90)	<0.001	3.2 (1.94–5.32)	<0.001
Lymph node metastasis	1.8 (1.15–2.90)	0.011	1.2 (0.65–2.03)	0.630
Duration of drain >5 days[a]	1.4 (0.91–2.16)	0.121	0.8 (0.38–1.67)	0.551
Amount of drain >1272 ml[a]	1.7 (1.08–2.59)	0.022	2.0 (0.94–4.11)	0.075
Adjuvant pelvic RT[b]	3.5 (2.21–5.39)	<0.001	3.1 (1.75–5.52)	<0.001
Early ambulation ≤24 h	0.6 (0.41–0.97)	0.037	1.1 (0.67–1.87)	0.676

OR, odds ratio; CI, confidence interval.
[a] Median.
[b] Three cases of brachytherapy only were excluded.

Risk factors for clinically diagnosed LEL were described in Table 2. Multivariate analysis showed that >30 lymph nodes retrieved (odds ratio [OR] 3.2; 95% confidence interval [CI] 1.94–5.32; $p < 0.001$) and adjuvant pelvic radiotherapy (OR 3.1; 95% CI 1.75–5.52; $p < 0.001$) are independent risk factors for the clinical diagnosis of LEL.

Table 4
Univariate and multivariate analyses for risk factors of greater increases in subcutaneous layer thickness of the thigh between preoperative and postoperative 1-year computed tomography scans.

	Univariate		Multivariate	
	OR (95% CI)	p-Value	OR (95% CI)	p-Value
Difference of AWTs between CTs >1.2 mm	1.3 (0.87–2.0)	0.194	1.2 (0.79–1.97)	0.349
Open surgery	2.3 (1.38–3.79)	0.001	1.8 (1.01–3.11)	0.045
Total number of lymph nodes retrieved >30	2.9 (1.83–4.47)	<0.001	2.3 (1.40–3.74)	0.001
Lymph node metastasis	1.8 (1.16–2.84)	0.009	1.3 (0.74–2.19)	0.381
Operation time > 3 h	1.9 (1.21–2.86)	0.005	1.7 (1.05–2.83)	0.032
Duration of drain >5 days	1.6 (1.04–2.38)	0.031	1.1 (0.70–1.83)	0.603
Adjuvant pelvic RT	2.1 (1.35–3.22)	0.001	1.7 (1.01–2.74)	0.046
Early ambulation ≤24 h	0.6 (0.41–0.93)	0.021	1.2 (0.69–2.0)	0.552
Elastic stocking	0.8 (0.50–1.15)	0.192	1.1 (0.63–1.82)	0.796
Intermittent pneumatic compression	0.5 (0.30–0.91)	0.022	0.5 (0.24–0.94)	0.034

AWT, abdominal wall thickness; CI, confidence interval; CT, computed tomography; OR, odds ratio; RT, radiotherapy.

Risk factors for greater increases in the thickness of the subcutaneous layer of the thigh between preoperative and postoperative 1-year CT scans are shown in Table 4. In the multivariate analysis, total number of lymph nodes retrieved >30 (OR 2.3; 95% CI 1.40–3.74; p = 0.001) and adjuvant pelvic radiotherapy (OR 1.7; 95% CI 1.01–2.74; p = 0.046) were independent risk factors for greater increases in subcutaneous layer thickness. Open surgery (OR 1.8; 95% CI 1.01–3.11; p = 0.045) and long operation time (OR 1.7; 95% CI 1.05–2.83; p = 0.032) were additional independent risk factors. Use of IPC was an independent protective factor against increased in subcutaneous layer thickness (OR 0.5; 95% CI 0.24–0.94; p = 0.034).

재료 및 방법
(Material & Methods)

What did I do?

재료(대상) 및 방법 작성의 개요

- "아무리 자세해도 지나치지 않다"
  - 다른 연구자가 이 연구를 평가하고 재현할 수 있도록 자세하게 (like a recipe)
  - Vendor and vendor contact information
- 포함될 내용
  - 연구디자인
  - 연구상태나 조건의 정의 (질병, 생리학적 상태..)
  - 연구대상의 정의 (환자, 정상인, 동물, 식물, 세포주..)
  - 연구대상 선정방법 계획
  - 구체적인 실험방법 결정
  - 모든 관찰항목과 관찰방법의 구체적인 결정
  - 자료평가를 위한 통계학적 분석법 선택과 기술

재료 및 방법 기술의 지침

1. 훈련된 연구자라면 연구를 재현하기에 충분한 내용과 참고문헌을 기술하되, 불필요한 세부사항을 포함하지 않는다.
2. 재료 및 방법 이외에 결과를 포함하지 않는다.
3. 긴 설명이 필요한 세부사항은 부록을 활용한다.
4. 적절한 주제 또는 소주제 별로 내용을 정렬한다.
5. 새로운 주제는 적절한 신호를 사용하여 연결한다.
6. 기능이 명확하지 않은 실험절차는 그 목적을 설명한다.
7. 수동태가 바람직하다.
8. 뚜렷한 이유 없이 관점을 바꾸지 않는다.
9. 정확한 단어를 사용한다.
10. 윤리 지침을 따르고, 이에 대해 기술한다. (animal & clinical)

재료 및 방법 작성시 유의사항 : 연결성 유지

- 실험절차가 연구목적과 연관되어 있음을 확인할 수 있도록 연구디자인을 설명하면서 질문을 반복
  - (주제문 사용) ***The effect*** of high-frequency ventilation on the discharge of the three known types of pulmonary receptors ***was ascertained as follows.*** After a single afferent nerve fiber from a slowly adapting….
  - (연결절 사용) ***To determine the effect*** of beta-adrenergic agonists on clearance of liquid from the lungs, we instilled…
- 본래 질문과 동일한 핵심 용어, 동사, 관점을 유지
- 방법을 결과와 연결
  - 결과에 있는 각각의 결과에 해당하는 내용이 방법에도 있어야 함

실험을 시행한 이유에 대한 설명

- 서론에서 제기한 질문과의 연관성이 분명하지 않은 경우 설명이 필요하다. calculate, estimate의 용어 구분
  - To+ 동사 / For + 명사
    - "To evaluate the anti-tumor effect, ..."
    - "For primary culture, the cells were resuspended in...."
  - Because (semicolon [;] 사용하여 생략가능)
    - Bovine serum albumin was included in the binding medium ***because*** albumin reduced...
    - Radiolabeled surfactant protein A was used...***;*** storage for longer periods of time...

정확한 어휘 선택

- Measure, calculate, estimate의 용어 구분
  - "We measured heart rate and ventricular pressure and calculated maximal positive dP/dt."
- Determine; measurement and calculation
  - "We determined heart rate, ventricular pressure, and maximal positive dP/dt."
- Study, experiment, series, group의 용어 구분
  - Study: 현상이나 발달, 질문에 대한 지속적이고 체계적인 조사
  - Experiment: 가설의 타당성을 조사하기 위한 시험 (대상이 인간일 경우 study라고 함)
  - Series: 서로 연관된 2개 이상의 실험
  - Group: 같은 특성을 갖는 실험동물 또는 인간

관점(Point of view)

- 수동태가 많이 쓰임
  - Materials & methods 강조하기 위해
  - 글의 활력을 주기 위해 능동태를 한 번 정도 사용하기도 한다.

We collected the different fungal species from various tepuis in Venezuela.
Different fungal species were collected from various tepuis in Venezuela.

- 이유 없이 관점을 바꾸지 마라.
  - The assays were performed for 10 min at room temperature. We then added 10 ml of 95% ethanol. The assays were performed for 10 min at room temperature. The 10 ml of 95% ethanol were added.

관점(Point of view)

- We로 시작하는 문장이 너무 많아지지 않게
  - 하나의 실험의 단계를 한 문장에 넣음.
    - We dehydrated the pellets, cleared them with propylene oxide, and embedded small pieces of each pellet in blocks of Spurr's resin.
- 앞 부분에 변화를 주는 방법.
  - After 30 s, we centrifuged the samples.
  - Then we centrifuged the suspension as before.
  - To prepare isolated surface layers for electron microscopy, we resuspended the 0.1-ml pellets of packed, …

구성 (Organization)

- 주제별로 구분하고 소제목을 붙임.

Animal Studies	Clinical Studies
Materials	Study subjects
Animals	Inclusion criteria
Preparation & model establishment	Exclusion criteria
Study design	Study design
Interventions	Interventions
Methods of measurement	Methods of measurement
Calculations	Calculations
Analysis of data	Analysis of data

연구의 대상 기술

- 궁극적으로 목표로 하는 질환이나 상태
  - 난소암
    - 난소암 중 mucinous type 만...
    - 난소암 중 advanced stage 만?
  - 자궁경부암?
    - 수술대상의 초기...
    - Recurrent ?
- Example

1. Study subjects

This study was conducted prospectively in patients with cervical cancer the International Federation of Gynecology and Obstetrics (FIGO) stage IB1–IIA.

재료(대상)의 채택기준 및 제외기준

- Inclusion criteria

the cervical smear collected before radiotherapy in 169 patients with stage IB1 through stage IVB cervical cancer (International Federation of Gynecology and Obstetrics [FIGO]) between July 2003 and December 2006, at the National Cancer Center, Goyang, Gyeonggi, Korea.

- Exclusion criteria

Exclusion criteria included neuroendocrine histology, pathologically proven distant metastasis, history of psychiatric disease, preoperative urinary dysfunction, and another coexisting malignancy.

재료(대상) 선정방법, 규모 및 과정

- 연구에 사용한 개체 수(n)는 정확히 기록
- 시제는 과거를 주로 사용
  - "연구결과가 논문 중에 어떻게 기술되어 있다."라고 할 때는 현재 시제

> *… Data are summarized as mean ± SD in Table 1…..*

- 이용된 대조군 기술
- 환자를 표현할 때는 patient A, B… 등으로 표현
- CONSORT statement : for RCT
  - Consolidated Standards of Reporting Trials
  - Checklist of essential item and flow diagram
- PRISMA statement : for systematic review and meta-analysis
  - Checklist and flow chart

동물, 약제, 시료, 기구 등의 기술

- Generic name 사용
  - Paclitaxel, dopamine HCl
  - 시약은 화학명
  - 괄호
    - 상품명, 제조회사명, 제조일시, 제조번호
    - 기계, Kit : 회사이름, 소재도시명, 나라이름
    - 체중, 농도, 용량 등은 괄호로 넣거나, 앞으로 가면 괄호 없이 기술

DMEM culture medium (Gibco BRL, Long Islands, NY)

10 mg nitoglycerine , nitroglycerine (10 mg)

- 동물을 사용할 경우, 어떤 실험동물과 연령을 정확히 기술
  - **Animal (X)**
  - Six weeks old female athymic nude mouse….
- 측정단위 : SI Unit

Study Design

- 연구(실험)의 전체적인 조망 제시 (주제문)
  - 질문 (연구의 목적)
  - 독립변수와 측정값 (종속변수), 대조군(controls)
  - 각 실험의 구성, 순서(개입, 측정, 실험), 기간, 샘플 규모, ***반복실험 (repeats for reproducibility)***

예문: 연구디자인 (1)

- A ; 대상동물 (animals)
- B : 관리방법 (preparation)
- C : 동물모델 생성방법 (methods for model establishment)

Establishment of orthotopic tumor model

[A] Female athymic nude mice (NCr-nu) were purchased from the National Cancer Institute–Frederick Cancer Research and Development Center, and housed in specific pathogen-free conditions. [B] They were cared for in accordance with guidelines set forth by the Association for Assessment and Accreditation of Laboratory Animal Care International and the U.S. PHS Policy on Humane Care and Use of Laboratory Animals, and all studies were approved and supervised by the MD Anderson Cancer Center Institutional Animal Care and Use Committee.

[C] To produce tumors, Hec-1A and Ishikawa cells (both 4.0 x 10^6 cells per 50 μL HBSS) or Spec-2 cells (2.0 x 10^6 cells per 50 μL HBSS) (25) were injected into the mice. Before injection, mice were anesthetized with isoflurane inhalation (Baxter, Deerfield, IL), and a 0.5-cm incision was made in the right lower flank to optimize exposure to the right uterine horn. The distal portion of the horn was then identified and pulled to the incision for exposure. A single-cell suspension of 50 μL was then injected into the lumen of the uterine horn. The injection site was closely monitored during and following injection to ensure that no spillage occurred into the peritoneal cavity.

예문: 연구디자인 (2)

- A : 질문, 기다린 기간
- B ; n
- C; 시험군, 대조군
- D; 처치 (Intervention)
- E : 실험기간
- F : 종속변수 (dependent variables)

Therapy for established uterine tumors in nude mice

[A] To assess tumor growth, treatment began two weeks after injection of tumor cells. Mice were randomly divided into [B] 4 groups (n = 10 mice per group); [C] (a) control PBS, (b) 3G3, (c) paclitaxel (Ishikawa, Hec-1A and OVCA432) or docetaxel (Spec-2), and (d) 3G3 combined with chemotherapy (paclitaxel or docetaxel).

[D] Antibody 3G3 was dosed using 60 mg/kg intraperitoneal injection twice weekly with an initial loading dose of 214 mg/kg (21). Chemotherapy was injected into the peritoneal cavity once a week at a dose of 100 μg/mouse (paclitaxel) or 30 μg/mouse (docetaxel). Mice were euthanized after they became moribund (typically [E] six to seven weeks, depending on tumor cell type). [F] Tumor weight, number of tumor nodules, and distribution of tumors were recorded. Tumor tissue used in this study was obtained at the time of necropsy, and immersed in optimum cutting temperature medium for frozen slide preparations. Tumor specimens were also fixed in formalin for paraffin slide preparation.

실험방법의 기술

- 잘 알려진 방법
  - 설명 없이 참고문헌 제시
- 잘 알려지지 않은 방법
  - 핵심적인 특징 기술, 참고문헌 제시
- 개량한 방법
  - 개량한 것의 근본적인 특성과 목적 기술
- 새로운 방법
  - 완벽하게 설명필요 -> 독자들이 평가하고 재현 가능하도록

방법(Methods)

- **어떻게 했는가?**
- **왜 했는가?**

실험실 연구에서 반복실험의 기술

Cancer Therapy: Preclinical

Clinical Cancer Research

Biologic Effects of Platelet-Derived Growth Factor Receptor α Blockade in Uterine Cancer

Ju-Won Roh[1,5], Jie Huang[1], Wei Hu[1], XiaoYun Yang[1], Nicholas B. Jennings[1], Vasudha Sehgal[6], Bo Hwa Sohn[6].

Figure 3

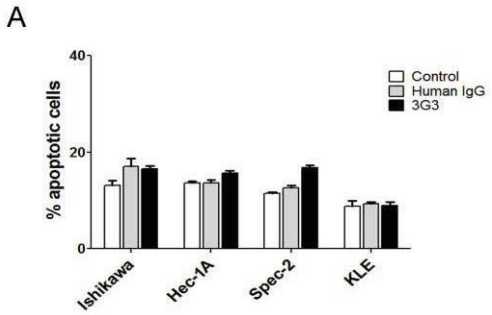


Fig. 3. Effect of 3G3 on tumor cell apoptosis. A, the apoptotic rate of cultured cell lines with treatment of 3G3 alone at 20 μg/mL, and B, the apoptotic rate after 3G3 treatment combined with cytotoxic chemotherapy in Ishikawa, Hec-1A, Spec-2, and KLE cells. Apoptosis was measured by determining the percentage of PE Annexin V/7-AAD-positive cells at 72 hours after treatment. Results were confirmed with triplicate experiments. Error bars, SEM. *, $P < 0.05$.

- Reviewer #2 (Reviewer Comments to the Author):

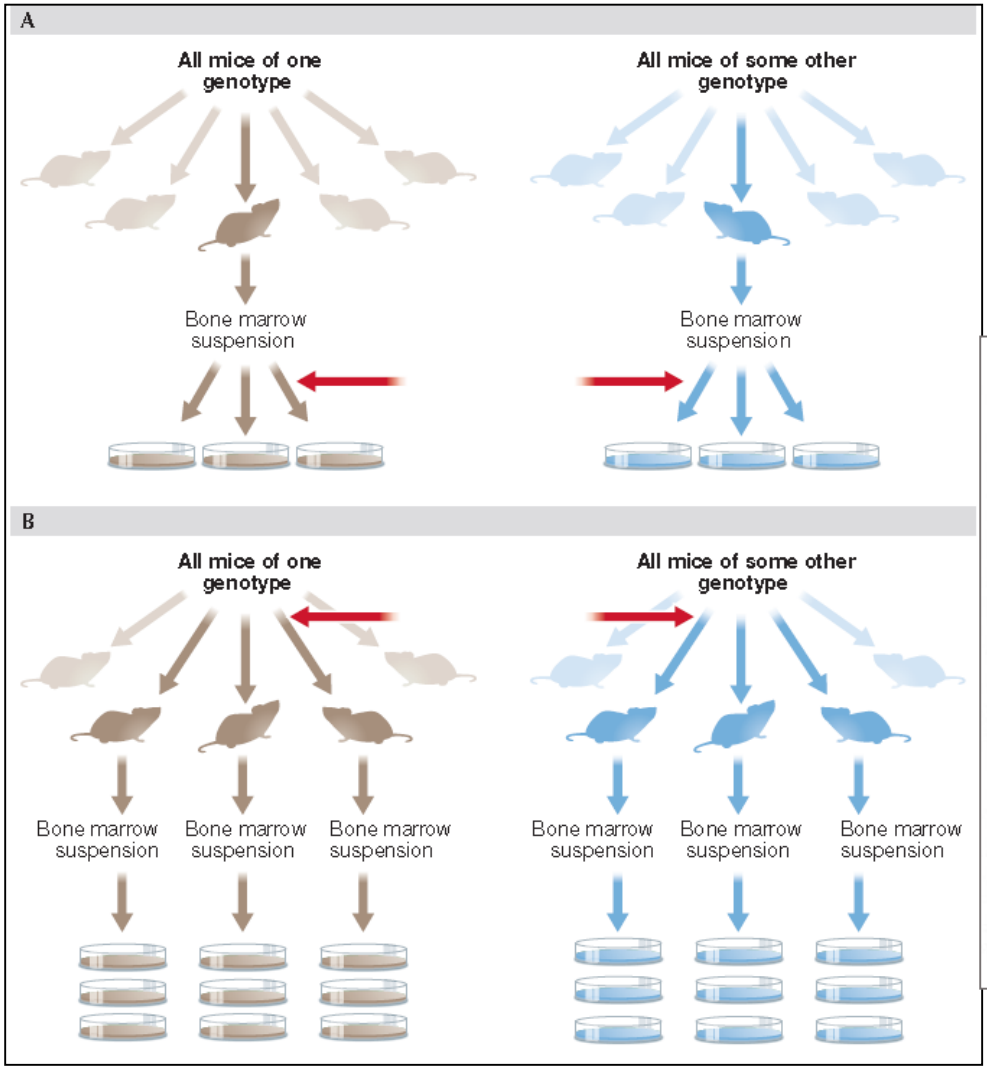
  …

  *3. It is **unclear** from the figure legends whether experiments shown in Figs. 2, 3, and 4 reflect **independent experiments or triplicate aliquots from the same experiments.** This is an important issue (D.L. Vaux, EMBO Rep. 13:291, 2012). If independent experiments were performed, this must be explicitly stated. If a "representative" experiment is provided, this should also be stated.*

EMBO reports

science & society

Replicates and repeats—what is the difference and is it significant?



uptake assay as described previously (24). Cells were plated on 96-well plates (7,000 per well for Ishikawa, Hec-1A, and KLE; 10,000 per well for Spec-2) in triplicate and incubated overnight at 37°C and 5% CO_2. After incubation, cells were

본문 : "Cells were plated on 96-well plates in triplicate~ "

Figure 3. Effect of 3G3 or the combination of 3G3 and chemotherapy on apoptosis. A, apoptosis of Hec-1A and RL95-2 cells was measured after treatment with 3G3 and PDGF-AA. "3G3 + PDGF-AA" means pretreatment with 3G3 before PDGF-AA stimulation, and "PDGF-AA + 3G3" means cotreatment with PDGF-AA and 3G3 at the same time. B, apoptosis of Ishikawa, Hec-1A, Spec-2, and KLE cells after pretreatment with 3G3 followed by cytotoxic chemotherapy. Apoptosis was measured by determining the percentage of PE Annexin V/7-AAD–positive cells at 72 hours after treatment. Statistical analysis was performed on the basis of 3 repeated experiments. Error bars, SEM. *, $P < 0.05$.

Legend : "~Statistical analysis was performed on the basis of 3 repeated experiments. ~"

데이터분석

- 어떻게 변수를 계산하였는지
- 데이터를 어떻게 요약하였는지
  - 정규분포: 평균값과 표준편차
  - 비정규분포
    - 중앙값(median)과 범위(range)
    - 중앙값(median)과 사분위수범위(range between the 25th and the 75th percentiles)

통계 분석

- 잘 알려진 방법: 통계 방법만 기술.
  - Student t-test, Chi-square, ANOVA, linear regression, correlation, Wilcoxon
- 잘 알려지지 않은 통계 방법:
  - 논문이나 책을 참고문헌으로 제시.
- 사용한 프로그램 (version, release number 포함)
- 각 통계 방법마다 샘플 크기가 다른 경우, 분명하게.
- 유의한 p 값 또는 95% 신뢰구간

재료 및 방법에서 흔히 보이는 오류

- 필요한 내용이 빠지는 경우 (방법과 결과가 일치하지 않는 경우)
- 특정 실험을 왜 했는지 알 수 없는 경우
- 특별한 이유 없이 수동태에서 능동태로
- 특별한 이유 없이 과거시제에서 현재시제로

Mistakes to avoid

- Any suboptimal aspect of your methods should be followed by “see the limitations” and deal with it there.

- Do not try to hide or disguise poor methods; experienced reviewers will pounce!
- Don’t describe standard methods in detail-use references

Gynecologic Oncology 144 (2017) 153–158

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Identifying risk factors for occult lower extremity lymphedema using computed tomography in patients undergoing lymphadenectomy for gynecologic cancers☆

Miseon Kim [a,1], Dong Hoon Suh [a,1], Eun Joo Yang [b], Myong Cheol Lim [c], Jin Young Choi [a], Kidong Kim [a], Jae Hong No [a], Yong-Beom Kim [a,*]

[a] Department of Obstetrics and Gynecology, Seoul National University Bundang Hospital, Seongnam, Republic of Korea
[b] Department of Rehabilitation Medicine, Seoul National University Bundang Hospital, Seongnam, Republic of Korea
[c] Gynecologic Cancer Branch and Center for Uterine Cancer, Research Institute and Hospital, National Cancer Center, Goyang, Republic of Korea

2. Methods

2.1. Study population

The medical records of 511 patients undergoing lymphadenectomy for gynecologic cancers in Seoul National University Bundang Hospital between June 2003 and March 2015 were retrospectively reviewed. Of the 511, 131 (25.6%) were diagnosed with lymphedema, whereas 405 (74.4%) were not. Among the 131 subjects with a diagnosis of lymphedema, 25 patients were excluded for having genital lymphedema; thus, a total of 106 patients had a diagnosis of LEL (Table 1 and Fig. 1). Every patient had results of both preoperative and postoperative 1-year (±6 months) abdominopelvic CT. Patients with any cause of LEL

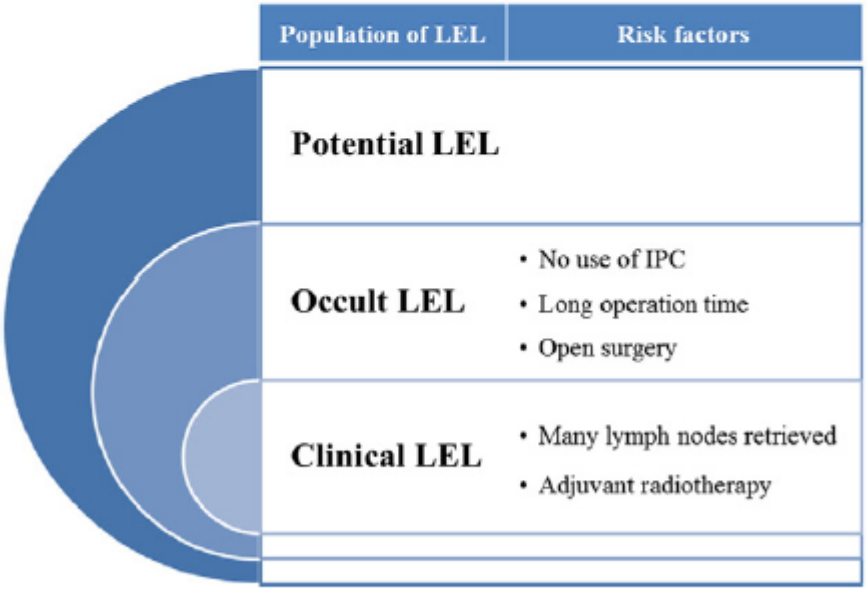

Fig. 1. Determination of computed tomography (CT)-based cut-off value of the difference in subcutaneous layer thicknesses between preoperative and postoperative 1-year CT scans.

2.2. Determination of cut-off value of subcutaneous layer thickness on CT scan of patients with LEL

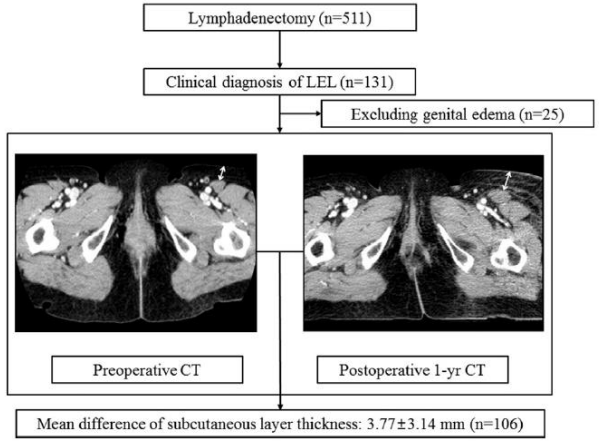

Fig. 2. Conceptual populations of lower extremity lymphedema with corresponding risk factors. LEL, lower-extremity lymphedema. Potential LEL has neither symptom/sign nor diagnosis, but could have risk factors; occult LEL has symptom and/or sign, but does not have diagnosis; clinical LEL has diagnosis of LEL based on obvious symptom and/or sign.

2.3. Surgical procedures

2.4. Assessment of risk factors for LEL

2.5. Statistical analysis

Student's *t*-test and Chi-square test were used for continuous and categorical variables, respectively. For corresponding non-parametric statistics, Mann-Whitney *U* and Fisher's exact test were used, respectively. In this study, variables with $p < 0.2$ in univariate analysis were selected to enter multivariate analysis to identify independent risk factors for LEL. We used SPSS version 22.0 (IBM Inc., Armonk, NY, USA) and $p < 0.05$ was considered statistically significant.

서론
(Introduction)

Why is this paper important?

Why did I do it?

서론에서 쓰여져야 할 내용

1. 연구배경
   - 연구의 중요성 부각
   - 지금까지 발표된 연구들을 체계적으로 검토하여 왜 본 연구가 의미를 갖는지, 왜 필요한지 설명
   - 자세한 비교는 고찰에서 시행하고, 서론에서는 과거 연구내용에 대한 상세한 설명 없이 자신의 연구와 가장 유사한 주요 문헌에 초점을 맞추어 작성
2. 연구와 관련된 직접적인 문제점
3. 연구를 통하여 얻고자 하는 목적
   - 서론의 마지막 문단으로 가장 중요한 부분

구성

1. what is the state of knowledge
2. what is the question
3. statement of hypothesis (optional)
4. summary of results (optional)

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Identifying risk factors for occult lower extremity lymphedema using computed tomography in patients undergoing lymphadenectomy for gynecologic cancers☆

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[b] Department of Rehabilitation Medicine, Seoul National University Bundang Hospital, Seongnam, Republic of Korea
[c] Gynecologic Cancer Branch and Center for Uterine Cancer, Research Institute and Hospital, National Cancer Center, Goyang, Republic of Korea

Introduction

Lower extremity lymphedema (LEL) is a chronic complication after pelvic lymphadenectomy that lasts a lifetime in most cases. Incidence rates of LEL after pelvic and/or para-aortic lymphadenectomy for the treatment of gynecologic cancers have been reported to be as high as 67% [1-3]. Many patients with LEL suffer from physical and psychological pain, as well as economic burdens, because lymphedema is difficult to cure, especially when it progresses to the irreversible stage. Therefore, LEL is one of the main causes of poor quality of life in postoperative patients with gynecologic cancers. For this reason, prophylaxis is more important than treatment in the management of LEL.

There are many studies evaluating risk factors of LEL, such as number of lymph nodes retrieved, removal of distal iliac lymph nodes, and adjuvant radiotherapy [4-8]. Patients with vulvar cancer after inguinal lymphadenectomy frequently suffer from severe lymphedema [3]. However, most of the previous reports were based on retrospective study populations, in which patients were not screened for the diagnosis of LEL, and therefore, the diagnosis may have been missed in some patients with symptoms and/or signs of LEL. Salani et al. reported that only 22% of patients who had swelling of the lower limb were diagnosed with LEL [9]. Patients who had symptoms and/or signs of LEL but were not diagnosed were defined as having occult LEL in our study, whereas those who were diagnosed with LEL based on symptoms and/or signs were defined as having clinical LEL. Furthermore, there might be patients who neither had symptoms nor signs of LEL, and who were not diagnosed with LEL, but have some risk factor of LEL; these patients were defined as potential LEL in our study (Fig. 1). Ideal risk factors are the ones identified from the genuine LEL population, including the occult LEL group. Those risk factors could identify potential LEL patients, as well. Therefore, we thought of an objective method to postoperatively monitor every patient who underwent pelvic lymphadenectomy, in order to identify risk factors for postoperative LEL (including occult LEL) more accurately and help in the early detection of LEL before it progressed.

Computed tomography (CT) is an important follow-up imaging study after surgery for gynecologic cancers. Many patients undergo serial CT scans, which have been shown to provide non-invasive measurements of edema accumulation [10, 11]. Therefore, we conducted this study to identify risk factors for occult LEL using CT scans in patients undergoing lymphadenectomy for gynecologic cancers.

Methods

Study population

The medical records of 511 patients undergoing lymphadenectomy for gynecologic cancers in Seoul National University Bundang Hospital between June 2003 and March 2015 were retrospectively reviewed. Of the 511, 131 (25.6%) were diagnosed with lymphedema, whereas 405 (74.4%) were not. Among the 131 subjects with a diagnosis of lymphedema, 25 patients were excluded for having genital lymphedema; thus, a total of 106 patients had a diagnosis of LEL (Table 1 and Fig. 1). Every patient had results of both preoperative and postoperative 1-year (±6 months) abdominopelvic CT. Patients with any cause of LEL other than lymphadenectomy for gynecologic cancers were excluded. We obtained Institutional Review Board approval of this study (B-1504-296-117).

Determination of cut-off value of subcutaneous layer thickness on CT scan of patients with

대상 질환의 심각성과 적절한 조치 개발 중요성

Lower extremity lymphedema (LEL) is a chronic complication after pelvic lymphadenectomy that lasts a lifetime in most cases. Incidence rates of LEL after pelvic and/or para-aortic lymphadenectomy for the treatment of gynecologic cancers have been reported to be as high as 67% [1-3]. Many patients with LEL suffer from physical and psychological pain, as well as economic burdens, because lymphedema is difficult to cure, especially when it progresses to the irreversible stage. Therefore, LEL is one of the main causes of poor quality of life in postoperative patients with gynecologic cancers. For this reason, prophylaxis is more important than treatment in the management of LEL.

관련 연구 검토

There are many studies evaluating risk factors of LEL, such as number of lymph nodes retrieved, removal of distal iliac lymph nodes, and adjuvant radiotherapy [4-8]. Patients with vulvar cancer after inguinal lymphadenectomy frequently suffer from severe lymphedema [3].

문제제기

However, most of the previous reports were based on retrospective study populations, in which patients were not screened for the diagnosis of LEL, and therefore, the diagnosis may have been missed in some patients with symptoms and/or signs of LEL. Salani et al. reported that only 22% of patients who had swelling of the lower limb were diagnosed with LEL [9]. Patients who had symptoms and/or signs of LEL but were not diagnosed were defined as having occult LEL in our study, whereas those who were diagnosed with LEL based on symptoms and/or signs were defined as having clinical LEL. Furthermore, there might be patients who neither had symptoms nor signs of LEL, and who were not diagnosed with LEL, but have some risk factor of LEL; these patients were defined as potential LEL in our study (Fig. 1). Ideal risk factors are the ones identified from the genuine LEL population, including the occult LEL group. Those risk factors could identify potential LEL patients, as well. Therefore, we thought of an objective method to postoperatively monitor every patient who underwent pelvic lymphadenectomy, in order to identify risk factors for postoperative LEL (including occult LEL) more accurately and help in the early detection of LEL before it progressed.

문제해결을 위한 가정

가설 수립과 연구 목적

Computed tomography (CT) is an important follow-up imaging study after surgery for gynecologic cancers. Many patients undergo serial CT scans, which have been shown to provide non-invasive measurements of edema accumulation [10, 11]. Therefore, we conducted this study to identify risk factors for occult LEL using CT scans in patients undergoing lymphadenectomy for gynecologic cancers.

서론 작성 시 주의점

- 간결하게!! 짧고 명료하게 작성
- 단도직입적
- 무엇에 의문을 느끼고 연구를 시작하였는지 금방 알아차릴 수 있도록
- 결과나 결론과 직접 관련이 없는 장황한 교과서적 배경 설명 배제
- 가치가 있는지? 누가 읽을 것인지? 발표하기에 적합한 학술지는 어느 것인지?
- 문장의 시제
  - 현재형: 명확히 알려진 사실
  - 과거형: 최근 연구된 내용이나 추가적인 연구가 필요한 결과, 타 연구와 배치되는 결론 등

Mistakes to avoid

- Don’t just describe the substance or problem under study
- Don’t try to show readers that you have read everything
- Do not include your fascinating work that is tangential or barely related to the central topic.
- Avoid formulaic first lines
  - “Addiction to “x” is a significant health problem”
  - “Access to legalized gambling has increased in the last two decades”

Summary

- 논문의 전체 구성을 늘 생각하고 작성해야 한다.
  - 시작하여 단기간에 초고를 완성하는 것이 바람직하지만, 시간을 갖고 maturation 과정을 거치는 것이 좋다. '조금 지나서 다시 보면 이전에 보이지 않았던 오류나 미처 생각지 못했던 것들이 생각날 때가 있다.'
- Introduction에서 질문하고, 방법과 결과를 통해 근거를 제시하고, discussion에서 답을 하는 큰 흐름을 유지한다.
- 세세한 문법보다는 논리적인 문맥의 흐름에 집중한다. 단, confidence 강도를 결정하는 단어의 선택은 신중하게 (교정으로 바꿀 수 없는 부분들...)
- 게재를 원하는 저널을 미리 선정하고, 유사한 형식의 논문을 많이 읽어, 형식과 경향성을 파악하여 참조한다.

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경청해주셔서 감사합니다.